

CLAIMS

What is claimed is:

- 1 1. A wireless modem unit (WMU) comprising:
 - 2 a processor;
 - 3 a modulator controlled by the processor;
 - 4 a pre-preamble modulator controlled by the processor;
 - 5 a summation circuit connected to receive an output from the modulator and an
 - 6 output from the pre-preamble modulator; and
 - 7 an output stage connected to an output of the summation circuit;
 - 8 wherein a pre-preamble signal generated by the pre-preamble modulator alerts
 - 9 the output stage of an impending data burst.
- 1 2. The wireless modem unit of Claim 1, wherein the pre-preamble modulator
- 2 produces a carrier at a frequency outside of a normal data band.
- 1 3. The wireless modem unit of Claim 2, wherein the carrier is Amplitude Shift
- 2 Key modulated.
- 1 4. The wireless modem unit of Claim 3, further comprising a diplexer
- 2 connected between the output stage and a transverter.
- 1 5. A transverter control system comprising:
 - 2 a diplexer connected to a wireless modem unit (WMU) and receiving a
 - 3 downstream signal and outputting an upstream signal;
 - 4 a transmission path comprising:
 - 5 a notch filter having an input connected to the upstream signal;
 - 6 an upconverter connected to the notch filter; and
 - 7 a transmitter switch connected to an output of the upconverter;
 - 8 a control path comprising:

9 a band pass filter having an input connected to the upstream signal; and
10 a detector and demodulator unit connected to the band pass filter;
11 wherein the detector and demodulator unit outputs a control signal to control
12 the upconverter and the transmitter switch based on a pre-preamble signal received
13 from the wireless modem unit.

1 6. A transverter control system for a wireless modem, the system comprising:
1 a wireless modem unit (WMU) comprising:
2 a processor;
3 a modulator controlled by the processor;
4 a pre-preamble modulator controlled by the processor;
5 a summation circuit connected to receive an output from the modulator
6 and an output from the pre-preamble modulator; and
7 an output stage connected to an output of the summation circuit;
8 wherein a pre-preamble signal generated by the pre-preamble
9 modulator alerts the output stage of an impending data burst; and
10 a transverter control system comprising:
11 a diplexer connected to a wireless modem unit (WMU) and receiving a
12 downstream signal and outputting an upstream signal;
13 a transmission path comprising:
14 a notch filter having an input connected to the upstream signal;
15 an upconverter connected to the notch filter; and
16 a transmitter switch connected to an output of the upconverter;
17 a control path comprising:
18 a band pass filter having an input connected to the upstream
19 signal; and

20 a detector and demodulator unit connected to the band pass
21 filter;
22 wherein the detector and demodulator unit outputs a control signal to control
23 the upconverter and the transmitter switch based on a pre-preamble signal received
24 from the wireless modem unit.

1 7. A method of control of a transverter in a wireless access system, the
2 method comprising:
3 creating a pre-preamble signal and a control data signal in a wireless modem
4 unit (WMU);
5 transmitting the pre-preamble signal as a notification signal;
6 transmitting the control data signal to the transverter;
7 detecting the pre-preamble signal at the transverter, and in response to the
8 detected signal, disabling a transmitter switch;
9 decoding and processing the control data signal; and
10 resetting the transmitter switch.

1 8. A method of transverter control, the method comprising:
2 programming a modem to a low frequency;
3 transmitting control data at the low frequency;
4 re-programming the modem to an appropriate frequency to transmit actual
5 data;
6 modifying transverter parameters in response to the control data; and
7 transmitting the actual data via the transverter.

1 9. A transverter pre-preamble signal detection circuit, the circuit comprising:
2 a tap connected to an upstream signal path;
3 an amplifier connected to a tap output;

4 a detector connected to an amplifier output;
5 a comparator having a first input and a second input, the first input connected
6 to a detector output, and the second input connected to a reference voltage; and
7 a one-shot circuit connected to an output of the comparator, the one-shot
8 controlling a power amplifier.

1 10. A transverter pre-preamble signal detection circuit having an automatic
2 reference level determination, the circuit comprising:

3 a tap connected to an upstream signal path;
4 an amplifier connected to a tap output;
5 a detector connected to an amplifier output;
6 a first filter having a fast response time connected to a detector output;
7 a second filter having a slow response time connected to the detector output;
8 a first comparator having a first input connected to the first filter and a second
9 input connected to the second filter; and

10 a one-shot circuit connected to an output of the first comparator, the one-shot
11 circuit comprising:

12 a diode;
13 a low pass filter connected to the diode;
14 a reference voltage source; and
15 a second comparator having a first input connected to the reference
16 voltage source, and a second input connected to the low pass filter.

1 11. A transverter pre-preamble signal detection circuit, the circuit comprising:

2 a tap connected to an upstream signal path;
3 a band pass filter connected to the tap;
4 an amplifier connected to a band pass filter output;

5 a detector connected to an amplifier output; and
6 a comparator having a first input and a second input, the first input connected
7 to a detector output, and the second input connected to a reference voltage;
8 wherein the detector circuits detects control commands sent from a modem
9 which are outside of a passband of the IF to RF conversions of the modem.